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Family Argentinidae

Body elongate, abdomen rounded. Mouth terminal, small or large. Maxillary forms lateral edge of upper jaw, with supplemental bone. Premaxillaries not protractile. Teeth various, sharp pointed. Pterygoids toothed. No barbels. Gill membranes separate from isthmus. Gills 4, slit after fourth. Branchiostegals 5 to 10. Stomach blind sac, with few or no appendages. Air vessel single, large. Ova large, fall into abdominal cavity before exclusion. Scales moderate or small, usually cycloid. Head naked. Lateral line present. No photophores. Dorsal short, nearly median. Adipose fin always present. Anal moderate.

Caudal forked. Pectoral low,  
Ventral moderate, nearly median.

Small marine fishes, many  
ascending streams in the spawning  
season. They are reduced salmonids,  
smaller and weaker than trout,  
from which they differ otherwise  
largely in the stomach. Most are  
excellent food fishes. Included  
here are only the deep water forms  
belonging to the genus Bathylagus.

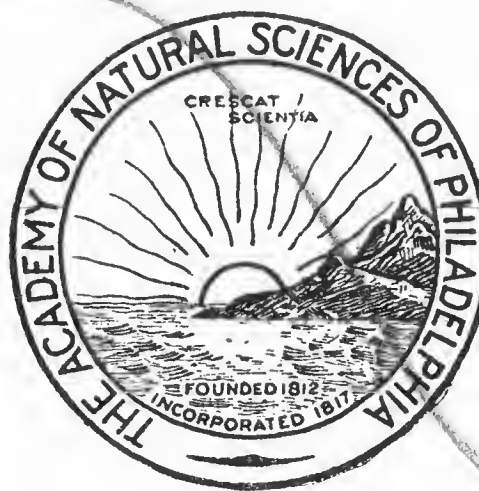


Genus Bathylagus Günther

Bathylagus Günther, Ann. Mag. Nat. Hist., London, ser. 5, vol. 2, 1878, p. 248. Type Bathylagus antarcticus Günther, designated by Jordan, Genera of Fishes, pt. 3, 1919, p. 395.

Body oblong, compressed. Head short, compressed, bones thin and membranaceous. Eye large. Mouth narrow, transverse, anterior. Upper teeth very feeble or rudimentary, lower very small, on jaw edges forming fine serrature. Series of minute teeth across vomer and along each palatine. Gill opening narrow, begins opposite pectoral base and extends across isthmus. Gill membranes united,

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JAMES A. G. REHN  
SECRETARY

LOGAN SQUARE  
PHILADELPHIA, PA.

free from isthmus. Gill rakers  
lanceolate, rather long. Gills  
small. Pseudobranchiae well developed.  
Scales moderate, thin, deciduous.  
Dorsal small, median. Adipose fin  
present. Anal, <sup>posterior,</sup> moderate or long.  
Caudal forked. Paired fins well  
developed, ventral opposite dorsal.

# Analysis of species

a. Head 4 to 5.

b. Dorsal origin nearer snout tip than caudal base.

c. Anal 13; depth  $4\frac{1}{4}$ . atlanticus.

c.<sup>2</sup> Anal 16 to 25; depth 5 to  $7\frac{1}{3}$ .

d. Eye  $2\frac{3}{5}$  in head; head  $5\frac{1}{4}$  to  $5\frac{1}{3}$ .  
microcephalus.

d.<sup>2</sup> Eye 2 to  $2\frac{1}{2}$  (rarely  $2\frac{3}{5}$ ); head 4 to  $4\frac{2}{3}$ .

e. Anal origin  $2\frac{2}{3}$  to  $3\frac{1}{5}$  times as distant from snout end as from caudal base; anal fin base  $4\frac{1}{2}$  to nearly 6 in fish.

f. Depth 6 to  $7\frac{1}{3}$ ; Anal 18 to 21.

g. Depth 6 to  $6\frac{1}{4}$ ; head  $4\frac{1}{8}$  to  $4\frac{1}{3}$ ; interocular  $2\frac{3}{4}$  to 3; dorsal



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origin nearer adipose fin than  
snout end.

glacialis.  
g.<sup>2</sup> Depth 7 to  $7\frac{1}{3}$ ; head  $4\frac{1}{4}$  to  $4\frac{3}{5}$ .  
Interocular 4 or more in head;  
dorsal origin equidistant between  
snout end and adipose fin.

gracilis.  
f.<sup>2</sup> Depth 5 to  $5\frac{3}{4}$ ; Anal usually 19 to 25.

h. Head  $4\frac{1}{3}$  to  $4\frac{3}{5}$ ; eye  $2\frac{1}{5}$  to  
 $2\frac{1}{2}$ , equals or less than postorbital;  
A<sub>anal</sub> 22 to 25, base length  $4\frac{1}{2}$  to  
 $5\frac{1}{5}$  in fish. antarcticus.

h. Head  $4\frac{1}{5}$  to  $4\frac{1}{3}$ ; eye little  
over 2, greater than postorbital;  
Anal 19, base length  $5\frac{3}{5}$  to  $5\frac{2}{3}$   
in fish. benedicti.

h. Head 4 to  $4\frac{1}{2}$ ; eye  $2\frac{1}{4}$  to  $2\frac{1}{2}$ ;  
Anal 19 (16). pacificus.

e. Anal origin  $3\frac{1}{3}$  to  $3\frac{3}{5}$  times as  
distant from snout end as caudal  
base; Anal base  $6\frac{1}{4}$  to  $6\frac{2}{3}$  in fish.  
euroops.

b.<sup>2</sup> Dorsal origin nearer caudal base than snout end.

i.<sup>1</sup> Dorsal 12; Anal 13; occipital region normal.

f.<sup>1</sup> Eye  $2\frac{1}{2}$  to  $2\frac{3}{4}$  in head. argyrogaster.

f.<sup>2</sup> Eye 3 to  $3\frac{2}{3}$  in head. nigrigenys.

i.<sup>2</sup> Dorsal 8; Anal 24; occipital region swollen, with median keel. milleri.

a.<sup>2</sup> Head 3; Dorsal 9, origin nearer caudal base than snout tip. longiceps.



. Bathylagus atlanticus Günther

Bathylagus atlanticus Günther, Ann.

Mag. Nat. Hist., London, ser. 5, vol. 2, 1878,  
p. 248. South Atlantic, 2040 fathoms;

Rep. Voy. Challenger, vol. 22, 1887, p. 219

(type) ✓ — ? Holt and Burne, Dep. Agric.

— Goode and Bean, Oceanic Ichth., 1895,  
p. 54 (compiled).

— Horman, Discovery Rep., vol. 2, 1930, p. 274  
(type ; ? off south west Ireland; N.  $50^{\circ}57'$   
W.  $11^{\circ}38'$ , 700 fathoms).

Bathylagus atlanticus Günther

Bathylagus atlanticus Günther, Ann.

Mag. Nat. Hist., London, ser. 5, vol. 2, 1878,  
p. 248. South Atlantic, 2040 fathoms;

Rep. Voy. Challenger, vol. 22, 1887, p. 219

(type) ! — ? Holt and Byrne, Dep. Agric.

Ireland Fisher. Sci. Investig., no. 2, 1905,

p. 6, pl. 1, figs. 3-4 (<sup>off</sup> County Mayo, western Ireland).

— Norman, Discovery Rep., vol. 2, 1930, p. 274

(type ; ? off south west Ireland; N.  $50^{\circ}57'$

W.  $11^{\circ}38'$ , 700 fathoms).

(Copy here Norman p. 274)

89919 U.S.N.M. N.  $33^{\circ}50'$  W.  $63^{\circ}55'$

Museum of Comparative Zoology. Length

39 mm.



Bathylagus microcephalus horman

Bathylagus microcephalus horman,

Discovery Rep., vol. 2, 1930, p. 274, fig. 5

(outline). S.  $33^{\circ}50'$  to  $34^{\circ}13'$  E.  $16^{\circ}4'$  to  $15^{\circ}49'$ ,

859 to 950 meters; S.  $46^{\circ}56'$  W.  $46^{\circ}3'$ , 1050 to

1350 meters.

48919 U.S.N.M. N.  $32^{\circ}44'$  W.  $119^{\circ}32'$ .

In 776 fathoms.

Albatross Station 3627, April 13, 1896.

Length 173? mm. Type of Bathylagus  
milleri.

Bathylagus glacialis Regan

Bathylagus glacialis Regan, Trans. Roy. Soc. Edinburgh, vol. 49, pt. 2, no. 2, May 23, 1913, p. 231, pl. 9, fig. 2. S.  $68^{\circ}25'W$ .  $27^{\circ}10'$ , 1000 fathoms; S.  $68^{\circ}32'W$ .  $12^{\circ}49'$ , 800 fathoms; S.  $71^{\circ}50'W$ .  $23^{\circ}30'$ , 1000 fathoms; S.  $71^{\circ}22'W$ .  $16^{\circ}34'$ , 1410 fathoms; S.  $71^{\circ}32'W$ .  $17^{\circ}15'$ , 1221 fathoms. — Horman, Discovery Rep., vol. 2, 1930, p. 275 (S.  $33^{\circ}25'E$ .  $6^{\circ}31'$ , 1000 meters; S.  $41^{\circ}33'30''W$ .  $17^{\circ}58'$ , 112 meters; S.  $46^{\circ}56'W$ .  $46^{\circ}3'$ , 1050 to 1350 meters; types).

Bathylagus antarcticus (not Günther)

Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 13, fig. 2.



Bathylagus gracilis Lönnerberg

Bathylagus gracilis Lönnerberg, Wiss.

Ergebn. Schwed. Südpolar-Exped.,

vol. 6, no. 6, 1908, p. 68. S.  $63^{\circ}24'$  W.  $45^{\circ}40'$ ,

2800 meters; S.  $49^{\circ}56'$  W.  $49^{\circ}56'$ , 2700 meters.

— Horman, Discovery Rep., vol. 2, 1930, p.

276 (S.  $41^{\circ}43'20''$  W.  $42^{\circ}20'40''$ , 2000 meters;

S.  $39^{\circ}50'30''$  W.  $36^{\circ}23'$ , 1500 meters; S.  $53^{\circ}25'$

W.  $35^{\circ}15'$ , 1025 to 1275 meters; S.  $54^{\circ}51'24''$  W.

$31^{\circ}20'12''$ , 750 to 1000 meters; S.  $54^{\circ}19'30''$  W.  $30^{\circ}$

$31'30''$ , 780 to 1000 meters).

Bathylagus antarcticus Günther

Bathylagus antarcticus Günther, Ann.

Mag. Nat. Hist., London, ser. 5, vol. 2, 1878,  
p. 248. Antarctic, 1950 fathoms; Rep. Voy.  
Challenger, vol. 22, 1887, p. 220 (type).

— Goode and Bean, Oceanic Ichth., 1895,  
p. 55 (reference) ✓ Barnard Ann. South

— Brauer, Deutsch. Tiefsee Exped. Valdivia,  
vol. 15, Tiefsee-Fische, 1906, p. 12 (not fig;  
S.  $55^{\circ}57'2''$  E.  $16^{\circ}14'9''$ , 2000 meters; S.  $59^{\circ}16'3''$  E.  
 $40^{\circ}13'7''$ , 5450 meters; S.  $62^{\circ}26'6''$  E.  $53^{\circ}21'6''$ ,  
1500; S.  $37^{\circ}31'2''$  E.  $17^{\circ}1'6''$ , <sup>4953 meters,</sup> between Cape Colony and  
Bouvet Island).

49', 850 to 950 meters; S.  $53^{\circ}25'$  W.  $35^{\circ}15'$ , 1025  
to 1075 meters; type).

Bathylagus antarcticus Günther

Bathylagus antarcticus Günther, Ann.

Mag. Nat. Hist., London, ser. 5, vol. 2, 1878,  
p. 248. Antarctic, 1950 fathoms; Rep. Voy.  
Challenger, vol. 22, 1887, p. 220 (type).

— Goode and Bean, Oceanic Ichth., 1895,  
p. 55 (reference). — Barnard, Ann. South  
African Mus., vol. 21; pt. 1, June 1925, p. 129  
(S.  $37^{\circ}31'$  E.  $17^{\circ}1'$ , 1000 fathoms, south of  
Agulhas Banks). — Norman, Discovery  
Rep., vol. 2, 1930, p. 276 (S.  $43^{\circ}20'$  W.  $46^{\circ}2'$ ,  
2000 meters; S.  $33^{\circ}50'$  to  $34^{\circ}13'$  E.  $16^{\circ}4'$  to  $15^{\circ}$   
 $49'$ , 850 to 950 meters; S.  $53^{\circ}25'$  W.  $35^{\circ}15'$ , 1025  
to 1075 meters; type).



Bathylagus benedicti Goode and Bean

Bathylagus benedicti Goode and Bean,  
Oceanic Ichth., 1895, p. 55, pl. 17, fig. 64.  
 N.  $39^{\circ}44'30''$  W.  $71^{\circ}4'$ , 1022 fathoms; N.  $38^{\circ}59'$  W.  $70^{\circ}7'$ , 1344 fathoms; N.  $40^{\circ}29'$  W.  $66^{\circ}4'$ , 1769 fathoms. — Jordan and Evermann,  
Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 529 (compiled). — Horman, Discovery Rep.,  
 vol. 2, 1930, p. 277 (S.  $41^{\circ}43'20''$  W.  $42^{\circ}20'40''$ ,  
 2000 meters; S.  $53^{\circ}25'$  W.  $35^{\circ}15'$ , 1025 to 1075  
 meters).

? Bathylagus elongatus Roule, Bull. Inst.  
Océanogr. Monaco, no. 320, 1919, p. 8. (Cap Finisterre);  
Rés. Camp. Sci. Monaco, vol. 52, 1919, p. 22, pl. 1,  
 fig. 2. (Same specimen.)  
 (Insert descr.)

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33510 U.S.N.M. N.  $39^{\circ}44'30''$  W.  $71^{\circ}04'$

Albatross Station 2094. v Length 155 mm.  
Type. September 21, 1883.

35615 U.S.N.M. N.  $39^{\circ}39'45''$  W.  $71^{\circ}35'15''$ .  
August 19, 1884. In 538 fathoms.  
Length 91 to 88 mm. v 2 examples.  
Albatross Station 2201.

39480 U.S.N.M. N.  $40^{\circ}29'$  W.  $66^{\circ}4'$ .  
In 1767 fathoms. Albatross Station 2572.  
Length 105 mm.

44579 U.S.N.M. N.  $38^{\circ}59'$  W.  $70^{\circ}07'$ .  
In 1544 fathoms. Albatross Station 2711.  
September 16, 1886. Length 138 mm.?

Bathylagus pacificus Gilbert

Bathylagus pacificus Gilbert, Proc. U. S. Nat. Mus., vol. 13, 1890, p. 55. Albatross Stations 3071 and 3074, 685 to 877 fathoms, off Washington. — Goode and Bean, Oceanic Ichth., 1895, pp. 53, 510 (reference). — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 530 (compiled). — Gilbert, Proc. U. S. Nat. Mus., vol. 48, 1915, p. 312 (off southern California). — Horman, Discovery Rep., vol. 2, 1930, p. 277 (compiled).

Bathylagus borealis Gilbert, Rep. U. S. Fish Comm., pt. 19, 1893 (1895), p. 402. Albatross Stations 3327 and 3325, 284 to 322 fathoms, north of Unalaska Island. — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 3, 1898, p. 2824.



Depth 6 to  $6\frac{3}{4}$ ; head  $3\frac{7}{8}$  to 4, width  $2\frac{1}{8}$  to  $2\frac{1}{5}$ . Snout (in profile)  $4\frac{1}{2}$  to  $6\frac{1}{2}$  in head from snout tip; eye  $2\frac{3}{4}$  to  $2\frac{7}{8}$ , greatly exceeds snout or interorbital; maxillary reaches  $\frac{1}{8}$  to  $\frac{1}{5}$  in eye, length 4 to  $4\frac{1}{4}$  in head from snout tip; interorbital, rather low, with deep median concave depression.

Gill rakers  $11 + 18$ , slender, flexible, 3 in eye, little greater than gill filaments.

Scales 38 to 40? (pockets) in lateral line to caudal base; 4 above, 4 below, 14? predorsal. Scales all fallen.

D. I, 8 or I, 9 (damaged), fin height  
2? to 2 1/2? in total head length;  
adipose fin 4 1/4, over hind anal rays;  
A. I, 16 (damaged), fin height 3 1/8?  
to 3 3/5?; caudal (damaged) small,  
with small though distinct rudimentary  
rays, at least 10 below; least depth  
of caudal peduncle 5?; pectoral (damaged)  
2 1/4? to 2 3/4; ventrals 3 1/8 to 3 1/5?  
(damaged), inserted below bases of  
last dorsal rays.

Brown to neutral blackish.  
Iris dark neutral gray. Belly and



breast neutral black. Fins dusky

48681 U.S.N.M. N.  $53^{\circ}37'10''$  W.  $167^{\circ}50'10''$ .

In 284 fathoms. August 20, 1890.

↓ Albatross Station 3325. Length 150 mm.

→ 53943 U.S.N.M. N.  $55^{\circ}20'$  W.  $136^{\circ}20'$ .

Albatross Station 2859. Length 104 to 191 mm., poorly preserved.

In 1569 fathoms. August 29, 1888.

76491 U.S.N.M. N.  $55^{\circ}6'$  W.  $169^{\circ}8'$ . August 5, 1895.

Albatross Station 3601. Length 134 mm., poorly preserved.

76492 U.S.N.M. N.  $54^{\circ}54'$  W.  $168^{\circ}59'$ . August 12, 1895.

Albatross Station 3604. Length 130 ? mm., caudal broken off.

77473 U.S.N.M.

Albatross Station 3627. Length 116 mm. ?

77474 U.S.N.M. Point Pinos Light House, S.  $50^{\circ}$  E., <sup>10.9 miles</sup> Monterey Bay, California. June 2, 1904.

74716 U.S.N.M. "Bowers Banks", Bering Sea.

June 3, 1906.

Albatross Station 4767. Length 31 mm.



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breast neutral black. Fins dusky  
to blackish.

Pacific Ocean.

→ 53943 U.S.N.M. N.  $55^{\circ}20'$  W.  $136^{\circ}20'$ .  
Albatross Station 2859. Length 104 to 191  
mm., poorly preserved.  
In 1569 fathoms. August 29, 1888.

76491 U.S.N.M. N.  $55^{\circ}6'$  W.  $169^{\circ}8'$ . August 5, 1895.  
Albatross Station 3601. Length 134 mm.,  
poorly preserved.

76492 U.S.N.M. N.  $54^{\circ}54'$  W.  $168^{\circ}59'$ . August 12, 1895.  
Albatross Station 3604. Length 130 ? mm.,  
caudal broken off.

77473 U.S.N.M.  
Albatross Station 3627. Length 116 mm. ?

77474 U.S.N.M. Point Pinos Light House, S.  $50^{\circ}E$ , 10.9 miles  
Monterey Bay, California. June 2, 1904.  
Albatross Station 4544. Length 156 mm.

77475 U.S.N.M. Point Pinos Light House, S.  $6^{\circ}E$ , 4.6 miles  
June 7, 1904.  
Albatross Station 4540. Length 168 mm.

Bathylagus eurypops Goode and Bean

Bathylagus eurypops Goode and Bean,  
Oceanic Ichth., 1895, p. 55, pl. 17, fig. 63.

N.  $39^{\circ}29'$  W.  $71^{\circ}46'$ , 693 fathoms; N.  $39^{\circ}52'$  W.  $70^{\circ}30'$ , 600 fathoms; N.  $40^{\circ}9'30''$  W.  $67^{\circ}9'$ , 135-6

fathoms. — Jordan and Evermann, Bull. U. S.

Nat. Mus., no. 47, pt. 1, 1896, p. 529 (compiled).

? Holt and Byrne, Dep. Agric. Ireland

(1913),

Fisher. Scient. Investig., no. 2, 1912, p. 24, pl.

fig. 10 (off Ireland, 400 to 900 fathoms).

— Korman, Discovery Rep., vol. 2, 1930, p. 277

(S.  $33^{\circ}50'$  to  $34^{\circ}13'$  E.  $16^{\circ}4'$  to  $15^{\circ}49'$ , 850 to 950

meters; S.  $60^{\circ}48'50''$  W.  $51^{\circ}00'20''$ , 1000 to 1100 meters;

S.  $38^{\circ}20'$  W.  $22^{\circ}18'$ , 1800 to 2000 meters).

Bathylagus eurypops var. latefrons

Linnberg, Wiss. Ergebn. Schwed. Südpolar-  
Exped., vol. 5, no. 6, 1905, p. 67. S.  $49^{\circ}56'W$ .

$49^{\circ}56'$ , 2700 meters.

? Bathylagus atlanticus (not Günther) Holt

and Byrne, dep. Agric. Ireland Fisher.

Scient. Investig., no. 2, 1905, p. 6, pl. 1.

figs. 3-4.



31861 U.S.N.M. N.  $39^{\circ}52'$  W.  $70^{\circ}30'$

Fish Hawk Station 1155 haul. 1882. In 554 fathoms.  
Type. Length 110? mm.

35420 U.S.N.M. N.  $39^{\circ}29'$  W.  $71^{\circ}46'$ .

In 693 fathoms.

Albatross Station 2181. July 23, 1884.  
Length 140 mm.

39477 U.S.N.M. N.  $40^{\circ}9'30''$  W.  $67^{\circ}9'$ .

In 1356 fathoms.

Albatross Station 2571.  
Length 88? mm. Type.

Bathylagus argyrogastrus horman

Bathylagus argyrogastrus horman,

Discovery Rep., vol. 2, 1930, p. 273, fig. 4

(outline). S.  $18^{\circ}37'E$ .  $10^{\circ}46'$ , 73 meters; S.  $15^{\circ}$

$55'E$ .  $10^{\circ}35'$ , 600 to 700 meters; S.  $5^{\circ}54'E$ .  $11^{\circ}19'$ ,

150 meters; S.  $2^{\circ}13'E$ .  $1^{\circ}52'$ , 71 meters; S.  $2^{\circ}43'$

$30''$  W.  $00^{\circ}56'30''$ , 125 to 175 meters; S.  $00^{\circ}56'$  W.

$14^{\circ}8'30''$ , 250 meters.

Bathylagus nigrigenys Parr

Bathylagus nigrigenys Parr, Bull. Bingham  
Oceanogr. Collection, vol. 2, art. 4, Oct. 1931,  
p. 4, fig. 2. N.  $20^{\circ}48'15''$  W.  $106^{\circ}11'50''$ , 540  
fathoms; N.  $16^{\circ}14'$  W.  $99^{\circ}36'30''$ , 625 fathoms.

Depth  $4\frac{7}{8}$ ; head 4. Snout to  
eye  $4\frac{1}{3}$  in head; eye 4, greater than  
snout; orbit  $3\frac{1}{3}$ ; maxillary scarcely  
more than half way to eye; mouth small,  
almost entirely transverse; premaxillary  
teeth minute, dentaries with fairly well  
developed teeth, irregular group at front  
end of vomer. Gill rakers 2.

Scales 40 to 45? in lateral series.

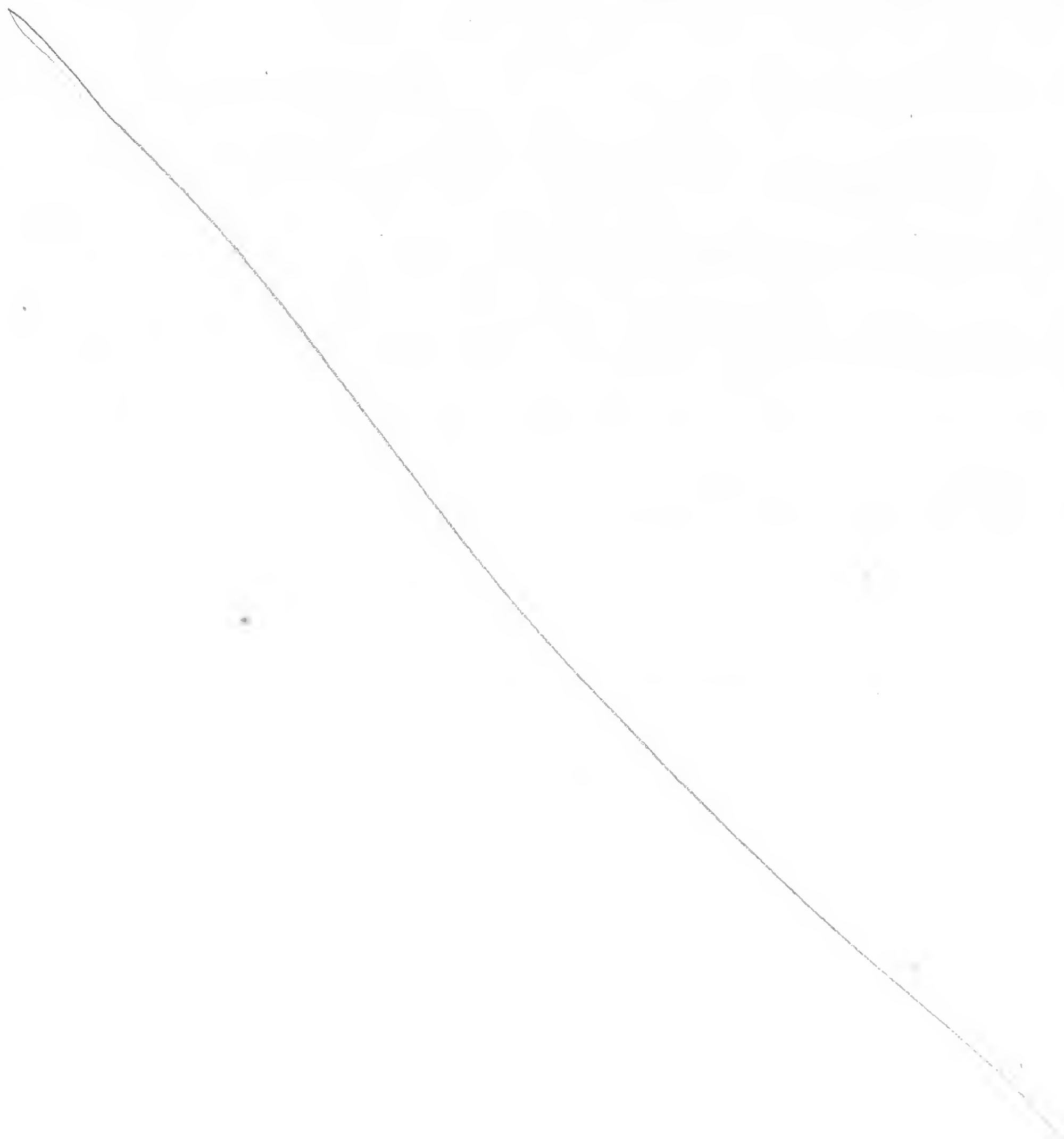
D. 11 or 12, fin height  $2\frac{1}{3}$  in head;  
adipose fin  $1\frac{2}{3}$ ; A. 14 to 17, fin height  
 $2\frac{4}{5}$ ; caudal length  $1\frac{7}{8}$ ; least depth of  
caudal peduncle  $3\frac{1}{8}$ ; pectoral  $1\frac{2}{3}$ ,  
rays 10; ventral rays 8 to 10, fin  $1\frac{7}{5}$   
in head.



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Dorsal surface of head, upper half  
of trunk and tail uniform dusky  
brown, lower surfaces pale. Inside  
mouth and gill cavity, also peritoneum,  
black. Length 82.5 mm. without  
caudal. (Parr.)

Pacific off Mexico.



Bathylagus milleri Jordan and Evermann

Bathylagus milleri (Jordan and Gilbert)  
Jordan and Evermann, Bull. U. S. Nat. Mus.,  
no. 47, pt. 3, 1898, p. 2825. Cortez Banks  
off San Diego, California, Albatross  
Station 3627, 776 fathoms. — Horman,  
Discovery Rep., vol. 2, 1930, p. 274 (compiled).

June 1930

Bathylagus longiceps Parr

Bathylagus longiceps Parr, Bull. Bingham  
Oceanogr. Collection, vol. 2, art. 4, Oct. 1931,  
p. 6, fig. 3. N.  $22^{\circ}50'20''$  W.  $109^{\circ}48'15''$ , 525  
fathoms; N.  $24^{\circ}7'$  W.  $108^{\circ}40'$ , 286 fathoms.

Depth  $5\frac{2}{3}$ ; head 3. Snout 3 in  
head to eye; eye  $6\frac{1}{2}$ ,  $2\frac{1}{8}$  in snout;  
orbit  $3\frac{1}{8}$ ; maxillary reaches eye,  
length  $2\frac{7}{8}$  in head from snout tip;  
single row of very fine teeth in  
premaxillaries and dentaries, conspicuously  
longer in latter; 2? transverse series of  
4 minute teeth across vomer and series of  
very minute teeth on each palatine.

D. 9, fin height  $4\frac{1}{10}$  in total head  
length; adipose fin 3; A. 12, fin height  
 $3\frac{1}{2}$ ; caudal 2; least depth of caudal  
peduncle  $3\frac{3}{4}$ ; ventral 2, rays 8.

Back dotted with very coarse black  
pigmentation, ventral surfaces pale. Inside  
mouth and gill openings, also peritoneum,  
black. Length 42 mm. without caudal. (Parr.)  
Off Cape San Lucas.



Family Serpidae

Body elongate, subterete. Head moderate or small. Mouth very small, terminal. Teeth small, chiefly in lower jaw and on vomer. Gill membranes separate. Branchiostegals reduced to 3 or 4. Dorsal fin short, posterior. Adipose fin present. Ventrals behind middle of body.

Parapriacanthus unwini (Ogilby)

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Pempheris unwini Ogilby, Mem. Australian Mus., vol. 2, 1889, p. 60. Lord Howe Island.

Pempheris unwinii Ogilby, op. cit., vol. 2, 1889, pl. 3, fig. 1.

Parapriacanthus unwini Ogilby, Mem. Queensland Mus., vol. 2, December 10, 1913, p. 67 (name).

Depth  $2\frac{4}{8}$ ; head  $2\frac{1}{2}$ . Snout  $4\frac{4}{5}$  in head from snout tip; eye 3, greater than snout; maxillary reaches  $\frac{1}{2}$  in eye, expansion  $2\frac{1}{4}$  in eye, length  $2\frac{1}{3}$  in head from snout tip; teeth uniserial, small, sharp, in jaws and on vomer and palatines. Scales 67. D.  $\overline{\text{V}}$ , 8; A.  $\overline{\text{III}}$ , 22. Brick red, head rather darker than body; Length 100 mm. (Ogilby)

Lord Howe Island. Possibly not different from Parapriacanthus guntheri.



Genus Serpe Risso

Serpe (Bloch) Risso, Ichth. Nice,  
1810, p. 356. Type <sup>Serpe</sup> microstoma Risso,  
monotypic.

microstoma Cuvier, Règne Animal,  
vol. 2, 1817, p. 184. Type Serpe  
microstoma Risso, monotypic.

Body cylindrical. Eye very large.  
Mouth cleft very small, short.  
Premaxillaries small. Maxillaries  
very short, broad. narrow series of  
fine, small teeth in lower jaw and  
across head of vomer. No other teeth.



Pseudobranchiae well developed. Air vessel large. Mucous membrane of stomach with numerous large papillae. No pyloric appendages. Body covered with large, thin, silvery scales. Scales extend over central caudal rays. Dorsal fin short, inserted behind ventrals, before anal. Adipose fin present in most young examples, frequently absent with age, small, narrow, end fringed or lacerated. Caudal forked.

Marine fishes of the deeper Atlantic and Pacific Oceans.

Subgenus Serpe Risso

Serpe microstoma Risso

Serpe microstoma Risso, Ichth. Nice,  
1810, p. 356. Nice.

Microstoma microstoma Brauer, Deutsch.  
Tiefsee Exped. Valdivia, vol. 15, Fische,  
1906, p. 10, fig. 1 (enteron) (S.  $3^{\circ} 31' E$ ,  
 $7^{\circ} 25' 6''$ , 600 meters, Gulf of Guinea).

Microstoma rotundata Risso, Hist. Nat.  
Eur. Mérid., vol. 3, 1826, p. 475, fig. 36.  
Nice. — Günther, Cat. Fishes Brit.  
Mus., vol. 6, 1866, p. 204 (Messina;  
Mediterranean).

Microstoma argenteum Valenciennes,  
Hist. Nat. Poiss., vol. 18, 18, p. 358,  
pl. 544. Nice, Gardinia, Messina.



Depth  $8\frac{2}{3}$ ; head  $3\frac{3}{4}$ , width  $2\frac{1}{3}$ .  
Snout  $4\frac{1}{10}$  to 5 in head from  
snout tip; eye  $2\frac{2}{3}$  to 3, greatly  
exceeds short snout or interorbital;  
maxillary reaches about  $\frac{4}{5}$  to eye,  
largely concealed, length 5 in head  
from snout tip; interorbital  $3\frac{2}{3}$ ,  
nearly level. Gill rakers  $4 + 8?$ ,  
short, slender, lanceolate, greatly  
less than gill filaments, which  $3\frac{1}{3}$   
in eye.

Scales about 38 to 40 (pockets)  
in lateral line to caudal base and

6 more out over middle of caudal basally; 4 above, 3 below, 18? predorsal to occiput. Scales all very caducous, mostly fallen except on caudal peduncle and caudal basally. Scales with 3 basal radiating striae, crossing converging circuli; circuli as 22 parallel close set striae forming 2 convergent groups, in each half of scale basally, not extending apically.

D. I, 7, second ray  $1\frac{1}{5}$  in total head, origin midway between depressed pectoral tip and caudal base or

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very slightly behind ventral origin;  
anal begins behind dorsal or  
much nearer caudal base than tip  
of depressed pectoral tip; caudal  
 $1\frac{2}{5}$ ? in head, evidently forked;  
least depth of caudal peduncle  $3\frac{1}{8}$ ;  
pectoral  $1\frac{7}{8}$ ; ventral 2.

Brilliant silvery white generally.  
Iris silvery white. Fins pale or  
whitish, dorsal and caudal scarcely  
darker.



~~silver white. Fins pale or whitish.~~

40072 U.S.N.M. Messina.  
Florence Museum. Length 37 to 93 mm.  
2 examples.

92242 U.S.N.M. Messina. Milan  
Museum. Length 97 to 108 mm.  
2 examples.

1 example, U.S.N.M. Messina.  
Florence Museum. Length 65 mm.

Serpe oblitum (Facciola)  
Microstoma oblitum Facciola,  
Nat. Siciliana, vol. 6, no. 9, 1887,  
p. 196. Sea of Messina.

Depth  $6\frac{1}{4}$  to  $6\frac{3}{5}$ ; head  $3\frac{1}{5}$  to  $3\frac{1}{4}$ , width  $2\frac{2}{5}$  to  $2\frac{3}{4}$ . Snout  $4\frac{1}{10}$  to  $4\frac{1}{5}$  in head from snout tip; eye 3, greatly exceeds short snout or interorbital; maxillary reaches  $\frac{3}{4}$  to eye, largely concealed, length  $4\frac{1}{2}$  to  $5\frac{1}{4}$  in head from snout tip; interorbital 4 to  $4\frac{1}{4}$ , nearly level. Gill rakers  $6 + 12?$ , lanceolate, slender, little longer than gill filaments or 3 in eye.

Scales  $38?$  (pockets <sup>in lateral line</sup> to caudal base and 11 more on latter; 3 above,



3 below, 18? predorsal. Scales very caducous, most all fallen except on caudal peduncle and caudal basally.

D. I, 8, second ray  $1\frac{2}{3}$  to  $1\frac{7}{8}$  in total head, origin midway between eye <sup>center</sup> and caudal base; A. I, 5, first branched ray  $2\frac{2}{3}$  to  $2\frac{3}{4}$ , origin at last third between dorsal origin and caudal base; caudal  $1\frac{1}{3}$  to  $1\frac{1}{3}$  in head, lobes pointed and fin forked; least depth of caudal peduncle  $2\frac{7}{8}$  to  $3\frac{1}{4}$ ; pectoral  $1\frac{3}{4}$ ?; ventral  $2\frac{1}{5}$ .

Silvery white generally. Iris

silvery white. Fins pale or whitish.  
Mediterranean.

40075 U.S.N.M. Messina. Florence  
Museum. Length 50 to 58 mm. 2 examples.

92241 U.S.N.M. Messina. Milan  
Museum. Length 42 to 54 mm. 3 examples.

Serpidae (Microstomidae)

Serpe Riss

Euproserpe m. subgen

Serpe schmidt m. sp.



Euproserpe new subgenus

Type - Serpe schmidtii new species

Body elongate, partly cylindrical.  
 Head small. Eye very large.  
 Mouth small, lower jaw protruding.  
 Maxillary short, wide, largely  
 concealed. Lateral line axial.  
 Dorsal inserted well before ventrals,  
 origin much nearer snout than  
 caudal base. Adipose fin well  
 developed, over anal.

Diagnosis. Well distinguished by  
 its advanced dorsal, before the  
 ventrals. The large thin scales very  
 caducous.

(Ev, well;  $\pi\rho\acute{o}$ , before; Serpe.)

Serge

Microstoma schmidti new species

Depth 7 to 8; head  $4\frac{1}{3}$  to  $4\frac{2}{5}$ , width 2 to  $2\frac{1}{10}$ . Snout (in profile) 5 to  $6\frac{1}{10}$  in head from snout tip; eye  $2\frac{1}{6}$  to  $2\frac{2}{3}$ , greatly exceeds snout or interorbital; maxillary reaches front eye edge to  $\frac{1}{5}$  in eye, length  $4\frac{1}{5}$  to  $4\frac{2}{5}$  in head from snout tip; interorbital  $4\frac{1}{5}$  to 5, depressed concavely so eye impinges little on upper profile. Gill rakers  $8+18$ , slender, flexible, slightly less than gill filaments or  $4\frac{3}{4}$  in eye.

Scales 38 to 40 in lateral line to caudal base and 9 more on latter; 3 above, 3 below, 17 or 18 predorsal. Scales all very caducous, only few remain about caudal base, all others fallen.

D. II, 7, I or II, 8, I, first branched ray  $1\frac{2}{5}$  to  $1\frac{1}{2}$  in total head length; adipose fin  $4\frac{1}{5}$  to 8; A. II, 6, I to II, 8, I, first branched ray  $2\frac{2}{3}$  to  $2\frac{4}{5}$ ; caudal  $1\frac{1}{3}$  to  $1\frac{3}{5}$ , well forked; least depth of caudal peduncle  $3\frac{1}{3}$  to  $3\frac{3}{5}$ ; pectoral  $1\frac{1}{2}$  to  $1\frac{2}{3}$ ;



ventral  $1\frac{4}{5}$  to  $1\frac{7}{8}$ .

Uniform pale brown. Head with silvery reflections on side, opercle underlaid with dark neutral gray. Iris neutral black, with iridescent tints. Inside mouth and gill opening black. Scales at caudal base and in lateral line on caudal peduncle silvery. Fins all uniformly pale brown, median and basal part of caudal dusky. Bases of ventral also dusky.

Diagnosis. Largely in the account

of the subgenus.

Type 20.

U.S.N.M.

2565. D. 5444. Atalaya Point,  
Bataq Island, S.  $65^{\circ}$  E., 5.1 miles  
(N.  $12^{\circ} 43' 5''$  E.  $124^{\circ} 59' 50''$ ), east coast  
of Luzon. In 308 fathoms. June 3, 1909.  
Length 188 mm.

1935. D. 5445. Atalaya Point, Bataq  
Island, S.  $56^{\circ}$  E., 5.3 miles (N.  $12^{\circ} 44' 42''$  E.  $124^{\circ} 59' 50''$ ), east coast of Luzon.  
In 383 fathoms. June 3, 1909. Length 219  
mm. Type.

2411 to 2417. D. 5589. Inabul Island  
(NW.) N.  $3^{\circ}$  W., 2.8 miles (N.  $4^{\circ} 12' 10''$  E.  $118^{\circ} 38' 8''$ ), Sibuko Bay, Borneo. In  
260 fathoms. September 29, 1909.  
Length 152 to 188 mm. 8 examples.